

WO 2004/050691

SEQUENCE LISTING

- <110> University of Cape Town  
South African Medical Research Council
- <120> A method for the production of HIV-1 Gag Virus-Like Particles
- <130> PA132610/PCT
- <140> PCT/IB03/  
<141> 2003-12-04
- <160> 4
- <170> PatentIn version 3.1
- <210> 1  
<211> 1549  
<212> DNA  
<213> Human immunodeficiency virus type 1

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<212> DNA

<213> Human immunodeficiency virus type 1

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<210> 3

<211> 513

<212> PRT

<213> Human immunodeficiency virus type 1

<400> 3

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Leu Lys His Ile Val Trp Ala Ser Arg Glu Leu Glu Arg Phe Ala Leu  
 35 40 45

Asn Pro Gly Leu Leu Glu Thr Ser Glu Gly Cys Lys Gln Ile Met Lys  
 50 55 60

Gln Leu Gln Pro Ala Leu Gln Thr Gly Thr Glu Glu Leu Lys Ser Leu  
 65 70 75 80

Tyr Asn Thr Val Ala Thr Leu Tyr Cys Val His Glu Lys Ile Glu Val  
 85 90 95

Arg Asp Thr Lys Glu Ala Leu Asp Lys Ile Glu Glu Glu Gln Asn Lys  
 100 105 110

Cys Gln Gln Lys Thr Gln Gln Ala Lys Ala Ala Asp Gly Lys Val Ser  
 115 120 125

Gln Asn Tyr Pro Ile Val Gln Asn Leu Gln Gly Gln Met Val His Gln  
 130 135 140

Ala Ile Ser Pro Arg Thr Leu Asn Ala Trp Val Lys Val Ile Glu Glu  
 145 150 155 160

Lys Ala Phe Ser Pro Glu Val Ile Pro Met Phe Thr Ala Leu Ser Glu  
 165 170 175

Gly Ala Thr Pro Gln Asp Leu Asn Thr Met Leu Asn Thr Val Gly Gly  
 180 185 190

His Gln Ala Ala Met Gln Met Leu Lys Asp Thr Ile Asn Glu Glu Ala  
 195 200 205

Ala Glu Trp Asp Arg Leu His Pro Val His Ala Gly Pro Ile Ala Pro  
 210 215 220

Gly Gln Met Arg Glu Pro Arg Gly Ser Asp Ile Ala Gly Thr Thr Ser  
 225 230 235 240  
 Thr Leu Gln Glu Gln Ile Ala Trp Met Thr Ser Asn Pro Pro Ile Pro  
 245 250 255  
 Val Gly Asp Ile Tyr Lys Arg Trp Ile Ile Leu Gly Leu Asn Lys Ile  
 260 265 270  
 Val Arg Met Tyr Ser Pro Val Ser Ile Leu Asp Ile Arg Gln Gly Pro  
 275 280 285  
 Lys Glu Pro Phe Arg Asp Tyr Val Asp Arg Phe Phe Lys Thr Leu Arg  
 290 295 300  
 Ala Glu Gln Ala Thr Gln Glu Val Lys Asn Trp Met Thr Asp Thr Leu  
 305 310 315 320  
 Leu Val Gln Asn Ala Asn Pro Asp Cys Lys Thr Ile Leu Arg Ala Leu  
 325 330 335  
 Gly Pro Gly Ala Thr Leu Glu Glu Met Met Thr Ala Cys Gln Gly Val  
 340 345 350  
 Gly Gly Pro Gly His Lys Ala Arg Val Leu Ala Glu Ala Met Ser Gln  
 355 360 365  
 Thr Asn Ser Gly Asn Ile Met Met Gln Arg Ser Asn Phe Lys Gly Pro  
 370 375 380  
 Arg Arg Ile Val Lys Cys Phe Asn Cys Gly Lys Glu Gly His Ile Ala  
 385 390 395 400  
 Arg Asn Cys Arg Ala Pro Arg Lys Lys Gly Cys Trp Lys Cys Gly Lys  
 405 410 415  
 Glu Gly His Gln Met Lys Asp Cys Thr Glu Arg Gln Ala Asn Phe Leu  
 420 425 430  
 Gly Lys Ile Trp Pro Ser His Lys Gly Arg Pro Gly Asn Phe Leu Gln  
 435 440 445  
 Asn Arg Pro Glu Pro Thr Ala Pro Pro Ala Glu Ser Phe Arg Phe Glu  
 450 455 460  
 Glu Thr Thr Pro Ala Pro Lys Gln Glu Pro Ile Glu Arg Glu Pro Leu  
 465 470 475 480  
 Thr Ser Leu Lys Ser Leu Phe Gly Ser Asp Pro Leu Ser Gln Lys Gly  
 485 490 495  
 Ala Arg Gln Gly Arg Leu Ser Thr Gln Glu Gln Met Ile Gln Tyr Cys  
 500 505 510  
 Arg

&lt;210&gt; 4

&lt;211&gt; 492

&lt;212&gt; PRT

&lt;213&gt; Human immunodeficiency virus type 1

&lt;400&gt; 4

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Glu Lys Ile Arg Leu Arg Pro Gly Gly Lys Lys His Tyr Met Leu Lys  
 20 25 30

His Ile Val Trp Ala Ser Arg Glu Leu Glu Arg Phe Ala Leu Asn Pro  
 35 40 45

Gly Leu Leu Glu Thr Ser Glu Gly Cys Lys Gln Ile Met Lys Gln Leu  
 50 55 60

Gln Pro Ala Leu Gln Thr Gly Thr Glu Glu Leu Lys Ser Leu Tyr Asn  
 65 70 75 80

Thr Val Ala Thr Leu Tyr Cys Val His Glu Lys Ile Glu Val Arg Asp  
 85 90 95

Thr Lys Glu Ala Leu Asp Lys Ile Glu Glu Glu Gln Asn Lys Cys Gln  
 100 105 110

Gln Lys Thr Gln Gln Ala Lys Ala Ala Asp Gly Lys Val Ser Gln Asn  
 115 120 125

Tyr Pro Ile Val Gln Asn Leu Gln Gly Gln Met Val His Gln Ala Ile  
 130 135 140

Ser Pro Arg Thr Leu Asn Ala Trp Val Lys Val Ile Glu Glu Lys Ala  
 145 150 155 160

Phe Ser Pro Glu Val Ile Pro Met Phe Thr Ala Leu Ser Glu Gly Ala  
 165 170 175

Thr Pro Gln Asp Leu Asn Thr Met Leu Asn Thr Val Gly Gly His Gln  
 180 185 190

Ala Ala Met Gln Met Leu Lys Asp Thr Ile Asn Glu Glu Ala Ala Glu  
 195 200 205

Trp Asp Arg Leu His Pro Val His Ala Gly Pro Ile Ala Pro Gly Gln  
 210 215 220

Met Arg Glu Pro Arg Gly Ser Asp Ile Ala Gly Thr Thr Ser Thr Leu  
 225 230 235 240

Gln Glu Gln Ile Ala Trp Met Thr Ser Asn Pro Pro Ile Pro Val Gly

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 Asp Ile Tyr Lys Arg Trp Ile Ile Leu Gly Leu Asn Lys Ile Val Arg  
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 Met Tyr Ser Pro Val Ser Ile Leu Asp Ile Arg Gln Gly Pro Lys Glu  
                  275                      280                      285  
 Pro Phe Arg Asp Tyr Val Asp Arg Phe Phe Lys Thr Leu Arg Ala Glu  
                  290                      295                      300  
 Gln Ala Thr Gln Glu Val Lys Asn Trp Met Thr Asp Thr Leu Leu Val  
                  305                      310                      315                      320  
 Gln Asn Ala Asn Pro Asp Cys Lys Thr Ile Leu Arg Ala Leu Gly Pro  
                                  325                      330                      335  
 Gly Ala Thr Leu Glu Glu Met Met Thr Ala Cys Gln Gly Val Gly Gly  
                                  340                      345                      350  
 Pro Gly His Lys Ala Arg Val Leu Ala Glu Ala Met Ser Gln Thr Asn  
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 Ser Gly Asn Ile Met Met Gln Arg Ser Asn Phe Lys Gly Pro Arg Arg  
                  370                      375                      380  
 Ile Val Lys Cys Phe Asn Cys Gly Lys Glu Gly His Ile Ala Arg Asn  
                  385                      390                      395                      400  
 Cys Arg Ala Pro Arg Lys Lys Gly Cys Trp Lys Cys Gly Lys Glu Gly  
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 His Gln Met Lys Asp Cys Thr Glu Arg Gln Ala Asn Phe Leu Gly Lys  
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 Ile Trp Pro Ser His Lys Gly Arg Pro Gly Asn Phe Leu Gln Asn Arg  
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 Pro Glu Pro Thr Ala Pro Pro Ala Glu Ser Phe Arg Phe Glu Glu Thr  
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 Thr Pro Ala Pro Lys Gln Glu Pro Ile Glu Arg Glu Pro Leu Thr Ser  
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 Leu Lys Ser Leu Phe Gly Ser Asp Pro Leu Ser Gln  
                                  485                      490